Installation & Operation Manual

FLO-STATION™

Open Channel (AC/DC) Monitor with display

Model 1000-3ST

V1.0, May 2011

FLOW-TRONIC nv

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CONTENTS

CONTENTS - 1 -

1 SPECIFICATIONS - 3 -

2 GENERAL INFORMATION - 4 -

2.1 SAFETY INFORMATION - 4 -
2.1.1 USE OF HAZARD INFORMATION - 4 -
2.1.2 PRECAUTIONARY LABELS - 4 -
2.1.3 PRECAUTIONARY LABELS - 4 -
2.1.4 CONFINED SPACE PRECAUTIONS - 5 -
2.2 PRODUCT OVERVIEW - 6 -
2.2.1 SYSTEM FEATURES - 6 -
2.2.2 APPLICATIONS - 7 -
2.3 UNPACK THE INSTRUMENT - 7 -
2.4 FRONT PANEL - 7 -

3 INSTALLATION - 8 -

3.1 MOUNT THE INSTRUMENT - 8 -
3.2 ELECTRICAL CONNECTIONS - 9 -
3.2.1 ELECTROSTATIC DISCHARGE (ESD) CONSIDERATIONS - 9 -
3.2.2 WIRING FOR POWER - 9 -
3.2.2.1 AC POWER - 9 -
3.2.2.2 DC POWER - 11 -
3.2.3 SENSOR CABLE CONNECTIONS - 12 -
3.2.4 4-20 MA OUTPUT CONNECTIONS - 13 -
3.2.5 ADDITIONAL CONNECTIONS - 14 -
3.3 CONNECT THE POWER SOURCE - 14 -
3.4 OPTIONAL DESICCANT - 15 -
3.5 RECORD THE INSTALLATION MEASUREMENTS - 16 -

4 OPERATION - 17 -

4.1 FLO-WARE - 17 -
4.1.1 RS232 SERIAL COMMUNICATIONS CABLE - 17 -

5 MAINTENANCE - 18 -

5.1 CLEANING - 18 -
5.2 FUSE REPLACEMENT (AC MODEL) - 18 -
5.3 DESICCANT REPLACEMENT - 18 -
5.4 LITHIUM BATTERY CHECK - 18 -

6 TROUBLESHOOTING - 19 -

7 REPLACEMENT PARTS AND ACCESSORIES - 20 -

8 CONTACT INFORMATION - 20 -

8.1 FOR BELGIUM AND LUXEMBOURG - 20 -
8.2 OUTSIDE BELGIUM AND LUXEMBOURG - 20 -
8.3 TECHNICAL SUPPORT - 20 -
8.4 REPAIR SERVICE - 20 -

APPENDIX - 21 -

APP. 1 FLOW-TRONIC CUSTOMER SERVICE DEPARTMENT REGISTRATION FORM - 21 -

WARRANTY STATEMENT - 22 -

IMPORTANT NOTE - 22 -

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1 Specifications

Specifications are subject to change without notice.

Housing	
Dimensions (W x L x D)	257,8 x 236,7 x 95,3 mm
Weight	2,3 kg
Enclosure	ABS Plastic, NEMA 4
Operating temperature	–10 to 50 °C, -20 to 50°C without display
Storage temperature	-20 to 60°C, -40 to 60 °C without display
Power requirements	
AC	85-264 VAC, 47-63 Hz, 32 watts
DC	12 VDC for Flo-Station without display or Flo-Station with display (Backlight off) 180 mA (2.1 watts) with (1) 4-20 mA utilized
General	
Data storage	64 k (16 k cycles of velocity/level data)
Local terminal	RS232C at 19.2K Baud
Optional display	Dimensions: 25,4 mm x 76,2 mm. Four lines of text display, FLOW, LEVEL, VELOCITY, TOTAL or any combination of any four channels containing data. screens may be programmed to alternate values displayed.
Timebase accuracy	**1 second per day**
Outputs	Four 4-20 mA outputs; system isolated, up to 600 ohm load. The 4-20 mA outputs are flow, level, velocity or surcharge level.
Contact closure	Dry contact closure with adjustable duration selectable (2 seconds maximum) for flow-proportional or alarm based on flow, level, velocity or surcharge level, temperature, battery voltage, each sample, bad sample or analog input. Rating: 1 A at 30 VDC (resistive); 0.5 A at 125 VAC (resistive).
Setup/Data retrieval	Flo-Ware for windows software is the user on-site setup, data management, and report generation software. It is compatible with desktop/portable computers using Windows 95/98/2000/Me/NT/XP/7. Flo-Ware for windows software can retrieve data from both Flo-Tote and Flo-Dar flow meters.
General	
Warranty	1 year

2 General information

The contents of this manual is thought to be accurate. The manufacturer is not liable for direct, indirect, special, incidental or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. In the interest of continued product development, the manufacturer reserves the right to make improvements in this manual and the products it describes at any time, without notice or obligation. Revised editions are found on the manufacturer's website.

2.1 Safety information

Please read this entire manual before unpacking, setting up or operating this equipment. Pay attention to all danger, warning and caution statements. Failure to do so could result in serious injury to the operator or damage to the equipment.
To make sure that the protection provided by this equipment is not impaired, do not use or install this equipment in any manner other than that specified in this manual.

2.1.1 Use of hazard information

DANGER
Indicates a potentially or imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING
Indicates a potentially or imminently hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION
Indicates a potentially hazardous situation that may result in minor or moderate injury.

Important Note: *Indicates a situation which, if not avoided, may cause damage to the instrument. Information that requires special emphasis.*

Notice: *Indicates a situation that is not related to personal injury.*

2.1.2 Precautionary labels

Read all labels and tags attached to the instrument. Personal injury or damage to the instrument could occur if not observed.

2.1.3 Precautionary labels

	This is the safety alert symbol. Obey all safety messages that follow this symbol to avoid potential injury. If on the instrument, refer to the instruction manual for operation or safety information.
	Electrical equipment marked with this symbol may not be disposed of in European public disposal systems after 12 August of 2005. In conformity with European local and national regulations (EU Directive 2002/96/EC), European electrical equipment users must now return old or end-of life equipment to the Producer for disposal at no charge to the user. ***Note:*** *For return for recycling, please contact the equipment producer or supplier for instructions on how to return end-of-life equipment, producer-supplied electrical accessories, and all auxiliary items for proper disposal.*

	This symbol, when noted on a product enclosure or barrier, indicates that a risk of electrical shock and/or electrocution exists.
	This symbol, when noted on the product, identifies the location of the connection for Protective Earth (ground).
	This symbol, when noted on the product, identifies the location of a fuse or current limiting device.
	This symbol, when noted on the product, indicated the presence of devices sensitive to Electro-static Discharge (ESD) and indicated that care must be taken to prevent damage with the equipment.

2.1.4 Confined space precautions

DANGER
Explosion hazard. Training in pre-entry testing, ventilation, entry procedures, evacuation/rescue procedures and safety work practices is necessary before entering confined spaces.

***Important Note**: The following information is provided to guide users of Flo-Dar Sensors on the dangers and risks associated with entry into confined spaces.*

On April 15, 1993, OSHA's final ruling on CFR 1910.146, Permit Required Confined Spaces, became law. This new standard directly affects more than 250,000 industrial sites in the U.S.A., and was created to protect the health and safety of workers in confined spaces.

Definition of a confined space:

A confined space is any location or enclosure that presents or has the immediate potential to present one or more of the following conditions:

- An atmosphere with less than 19.5% or greater than 23.5% oxygen and/or more than 10 ppm Hydrogen Sulfide (H_2S).
- An atmosphere that may be flammable or explosive due to gases, vapors, mists, dusts or fibers.
- Toxic materials which upon contact or inhalation, could result in injury, impairment of health or death.

Confined spaces are not designed for human occupancy. They have restricted entry and contain known or potential hazards. Examples of confined spaces include manholes, stacks, pipes, vats, switch vaults, and other similar locations.

Standard safety procedures must always be followed prior to entry into confined spaces and/or locations where hazardous gases, vapors, mists, dusts or fibers may be present. Before entering any confined space check with your employer for procedures related to confined space entry.

2.2 Product overview

The Flo-Station Monitor controls and transmits flow data from Marsh-McBirney (MMI) sensors (Figure 1). The Flo-Station becomes a powerful open-channel flow meter and data reporting system when it is used with the following components:

- MMI sensors
- Flo-Ware software
- Portable computer or pocket PC (not supplied)

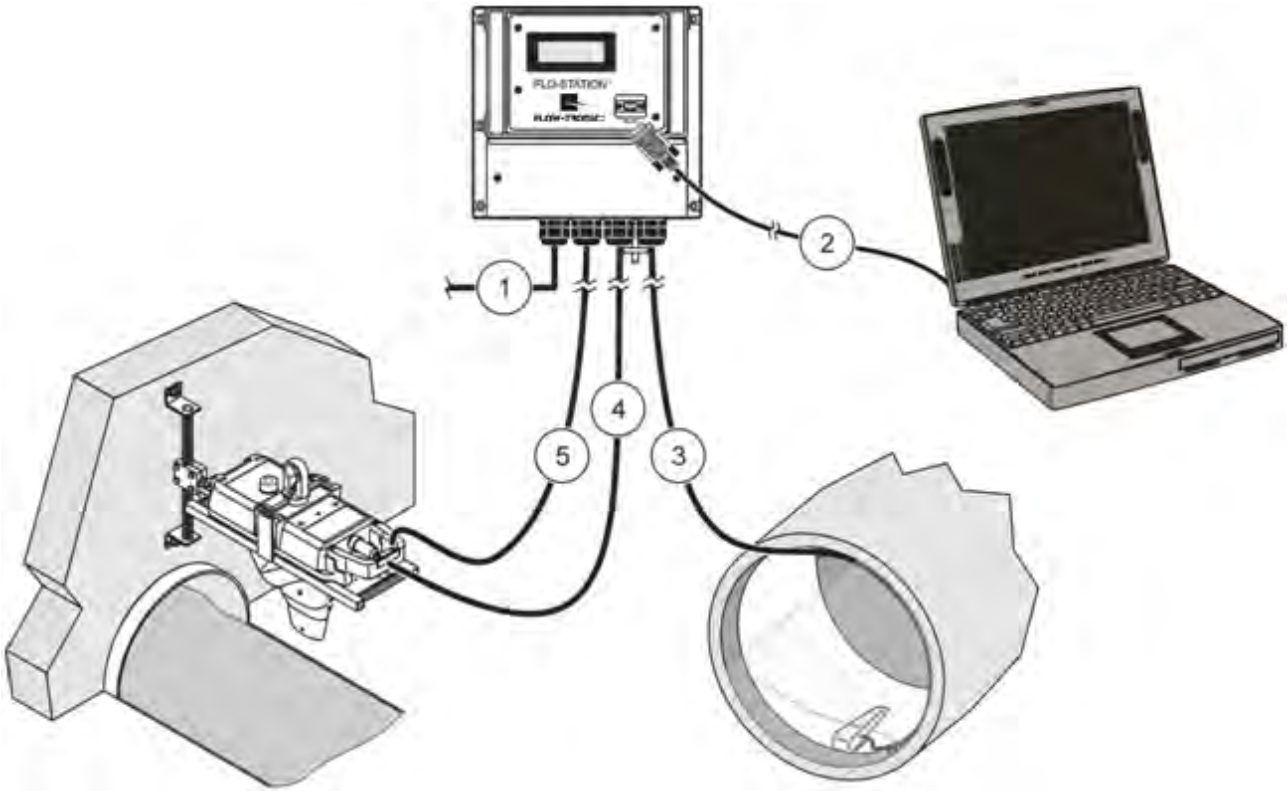

Figure 1: Typical Flo-Station system

1	AC or DC power cable	**4**	Flo-Dar sensor cable
2	RS232 interface cable	**5**	Surcharge Velocity Sensor (SVS) cable
3	Flo-Tote 3 sensor cable		

2.2.1 System features

The flow meter consists of the Flo-Station Monitor, a sensor unit (sold separately), and the sensor mounting frame assembly (sold separately). Refer to Figure 1. There are two versions of mounting hardware--permanent and temporary.

Note: *The Flo-Tote 3 sensor requires a mounting band for installation.*

The four 4-20 mA outputs provide a convenient way to transfer real-time flow data to SCADA and other data collection systems, control systems and display devices. The optional display shows the flow, velocity, level, totalized flow and other channels.

2.2.2 Applications

- Billing purposes
- EPA permitting requirements
- Inflow/Infiltration studies
- Combined sewer overflow monitoring
- Process control
- Modeling/Sewer system evaluations
- Wastewater treatment plant balancing

2.3 Unpack the instrument

Remove the Flo-Station and the included RS232 interface cable from the shipping carton. Inspect for any visible damage. If an item is missing or damaged, contact the manufacturer (Section 8 on page 25).

2.4 Front panel

Refer to Figure 2 for the Flo-Station Monitor front panel features.

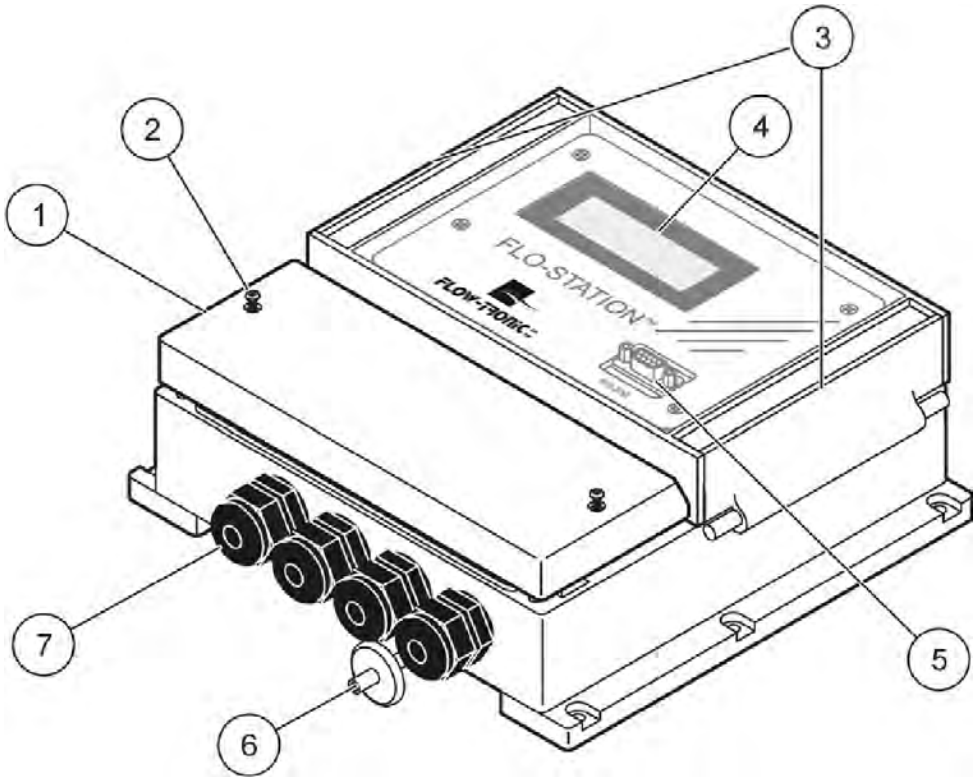

Figure 2: Flo-Station Monitor features

1	Bottom cover	**5**	RS232 connector
2	Cover attachment screw	**6**	Atmospheric pressure reference (APR) port hydrophobicfilter
3	Side channel cover access	**7**	Conduit hubs and strain relief fittings
4	Display (if equipped)		

3 Installation

3.1 Mount the instrument

DANGER
Potential confined space hazards. The monitor is not suitable for manhole installations.

DANGER
Only qualified personnel should conduct the tasks described in this section of the manual.

Important Note: *Do not mount the monitor in locations that receive direct exposure to sunlight or rain.*

Install the monitor on a flat surface indoors or in an environmental enclosure or protective covering outdoors.

1. Position the unit on the mounting surface. Make sure the unit is approximately eye-level with the cable entry side facing downward (Figure 3).

2. Mark the mounting hole positions and drill the appropriate-sized holes at the marked locations.

3. Use 6 screws or bolts to attach the monitor to the surface. Choose a fastener that is suitable for the mounting surface (concrete, wood, metal, etc.).

   Note: *The clearance through the mounting holes is 5 mm.*

4. Make sure the unit is secure.

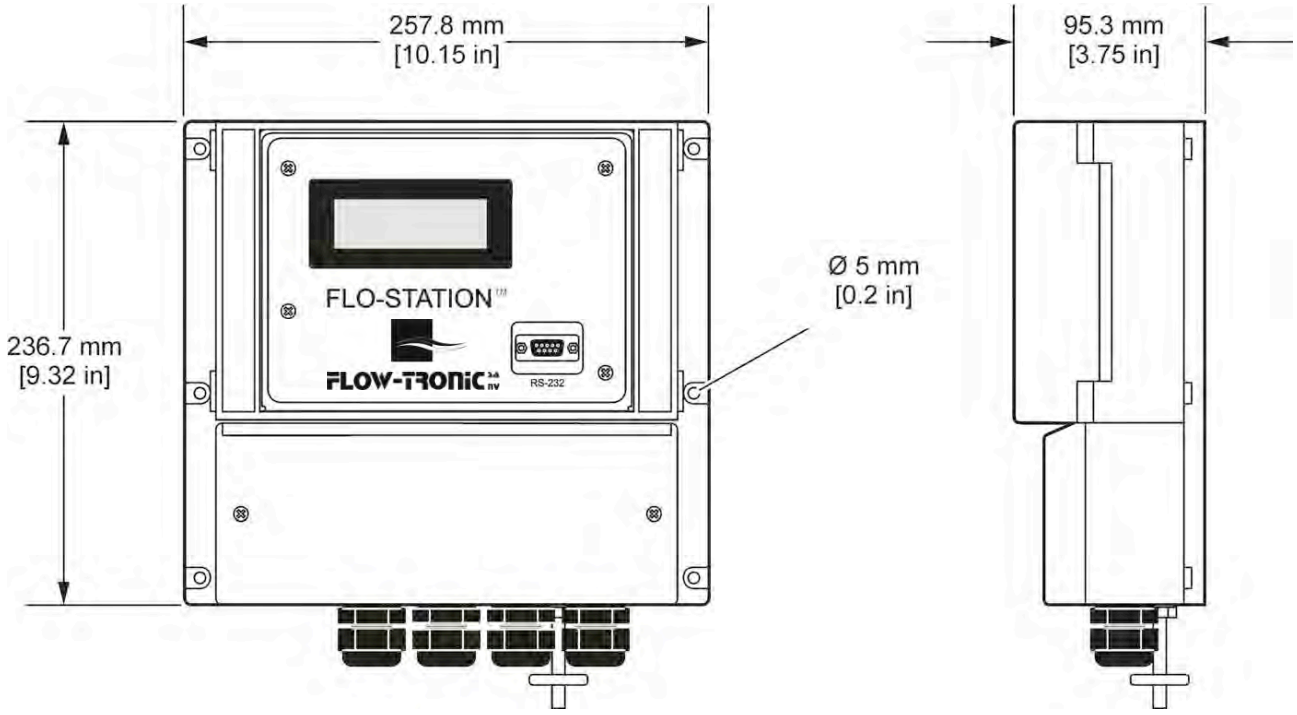

Figure 3 : Instrument dimensions

3.2 Electrical connections

DANGER
Electrocution hazard. Always disconnect power to the instrument when making any electrical connections.

When making any wiring connections to the instrument, the following warnings and notes must be adhered to, as well as any warnings and notes found throughout the individual installation sections. For more safety information refer to section 2.1 on page 4.

3.2.1 Electrostatic Discharge (ESD) considerations

Important Note: *To minimize hazards and ESD risks, maintenance procedures not requiring power to the analyzer should be performed with power disconnected.*

Delicate internal electronic components can be damaged by static electricity, resulting in degraded instrument performance or eventual failure.

The manufacturer recommends taking the following steps to prevent ESD damage to your instrument:

- Before touching any instrument electronic components (such as printed circuit cards and the components on them) discharge static electricity from your body. This can be accomplished by touching an earth-grounded metal surface such as the chassis of an instrument or a metal conduit or pipe.
- To reduce static build-up, avoid excessive movement. Transport static-sensitive components in anti-static containers or packaging.
- To discharge static electricity from your body and keep it discharged, wear a wrist strap connected by a wire to earth ground.
- Handle all static-sensitive components in a static-safe area. If possible, use anti-static floor and work bench pads.

3.2.2 Wiring for power

The AC and DC units have different power connectors. DC units have a fixed 2-terminal connector and AC units have a removable connector for the neutral and line wires. Use a screwdriver to secure all wiring connections.

3.2.2.1 AC power

Important Note: *Always use 18 AWG wire, stranded with 85% overall braid.*

1. Remove the bottom cover (Figure 2 on page 7).
2. Insert the power cable through the strain relief fitting or conduit hub in the bottom of the enclosure.
3. Properly prepare each wire (Figure 4 on page 10).
4. Install the ground wire to the protective earth grounding block (Figure 5 on page 10). Make sure the ground wire is securely connected.
5. Install the neutral and line wires into the AC power connector. Refer to Table 1 on page 10. Tighten each wire and then tug gently to make sure the connection is tight.
6. Plug the connector into the 100-240 VAC power block.
7. Tighten the strain relief, if used, to secure the cord.

8. Seal any unused openings in the enclosure with conduit sealing plugs.
9. Install the bottom cover.

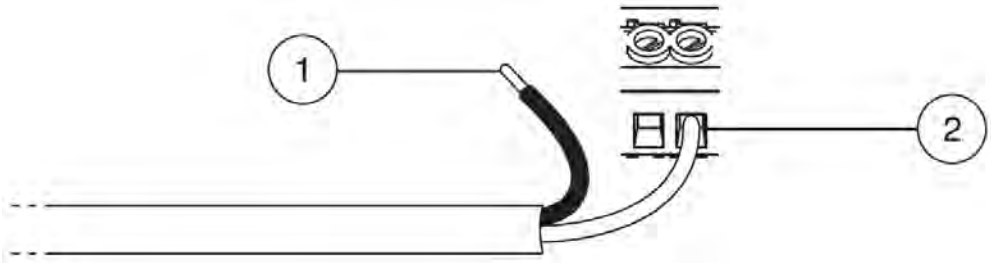

Figure 4: Wiring preparation and insertion

1	Strip 1 cm of insulation.	**2**	Seat insulation against connector with no bare wire exposed.

Table 1: Wiring information for AC power

Terminal description	**Wire color code for North America**	**Wire color code for EU**
Hot	Black	Brown
Neutral	White	Blue
Protective Earth (PE)	Green	Green w/yellow tracer

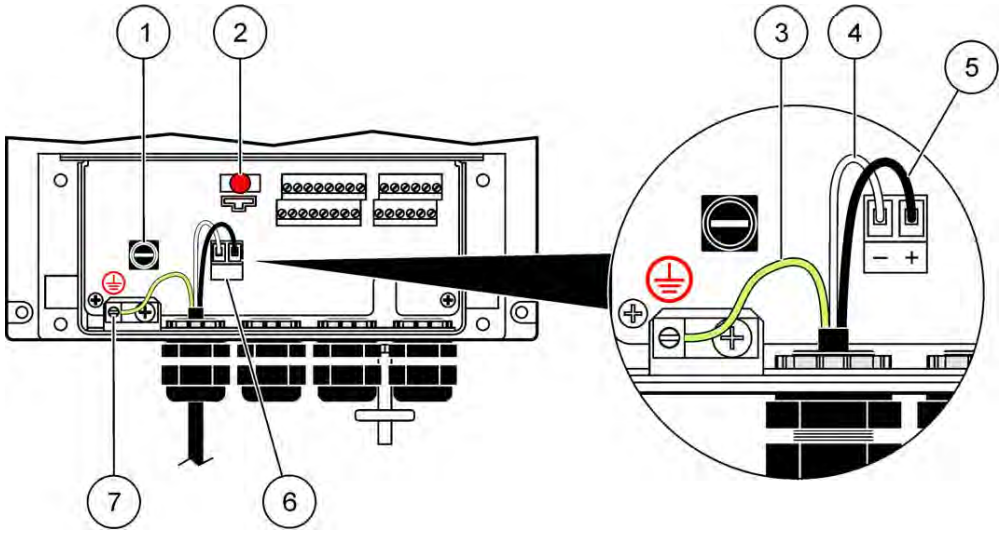

Figure 5: Wiring for AC power

1	Fuse holder	**5**	Line wire
2	Power reset button	**6**	AC power block
3	Ground wire	**7**	Protective earth grounding block
4	Neutral wire		

3.2.2.2 DC power

WARNING
Do not connect AC power to a DC monitor.

Important Note: *Always use 18 AWG wire, stranded with 85% overall braid.*

1. Remove the bottom cover (Figure 2 on page 7).
2. Insert the power cable through the strain relief fitting or conduit hub in the bottom of the enclosure.
3. Properly prepare each wire (Figure 4 on page 10).
4. Install the ground wire or cable braid to the protective earth grounding block (Figure 6, item 2 and item 6). Make sure the ground wire is securely connected.
5. Install the negative wire first and then the positive wire into the power terminal. Tighten each wire and then tug gently to make sure the connection is tight.
6. Tighten the strain relief, if used, to secure the cord.
7. Seal any unused openings in the enclosure with conduit sealing plugs.
8. Install the bottom cover. Figure 6

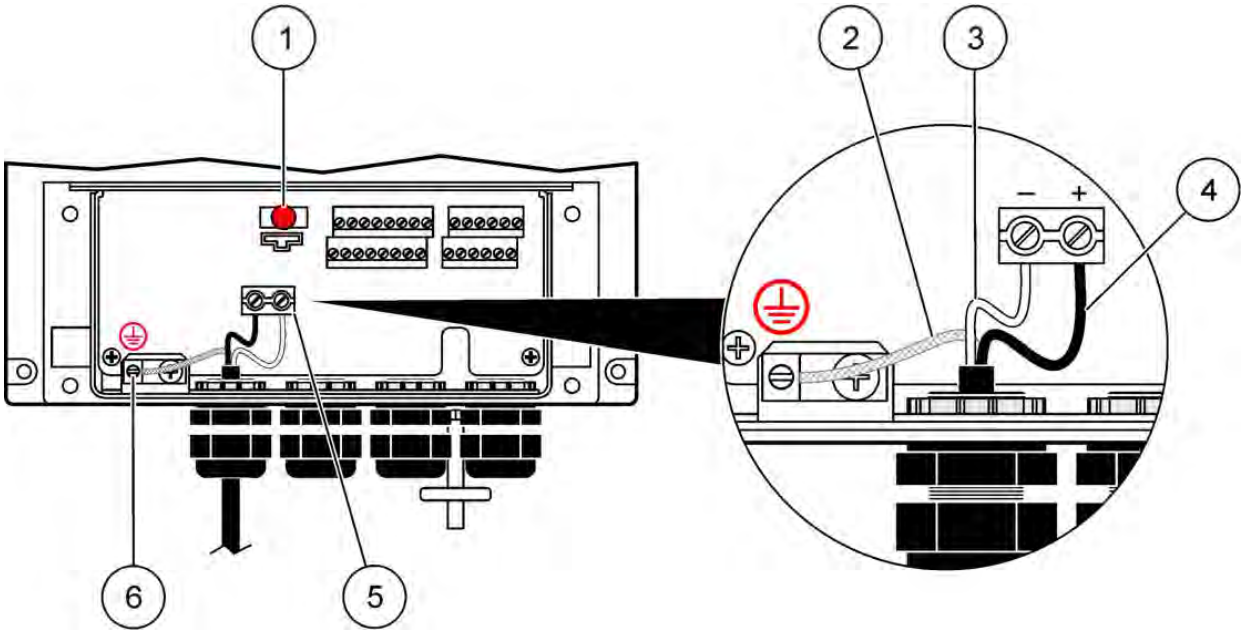

Figure 6: Wiring for DC power

1	Power reset button	**4**	Positive wire
2	Ground wire	**5**	DC power terminal
3	Negative wire	**6**	Protective earth grounding block

3.2.3 Sensor cable connections

DANGER
Potential confined space hazards. If conduit is installed from the monitor to the sensor, the conduit must be sealed to keep sewer gases out of the electronics.

The S1 terminal block is used for the Flo-Dar or Flo-Tote 3 sensor connections. The S2 terminal block is used for the optional Flo-Dar SVS sensor connections (Figure 7).

1. Disconnect power to the Flo-Station Monitor.
2. Remove the bottom cover.
3. Make sure that the ground wire is connected to the protective earth grounding block.
4. Insert the sensor cable(s) through the strain relief fitting or conduit hub near the S1 and S2 terminal blocks.
5. Install each wire into the terminal block as shown in Figure 7 and Table 2. Tighten each wire and then tug gently to make sure the connection is tight.
6. Insert the APR reference tube into the strain relief fitting until it stops (Figure 7, item 2).
7. Tighten the strain relief, if used, to secure the cable(s).
8. Install the bottom cover.

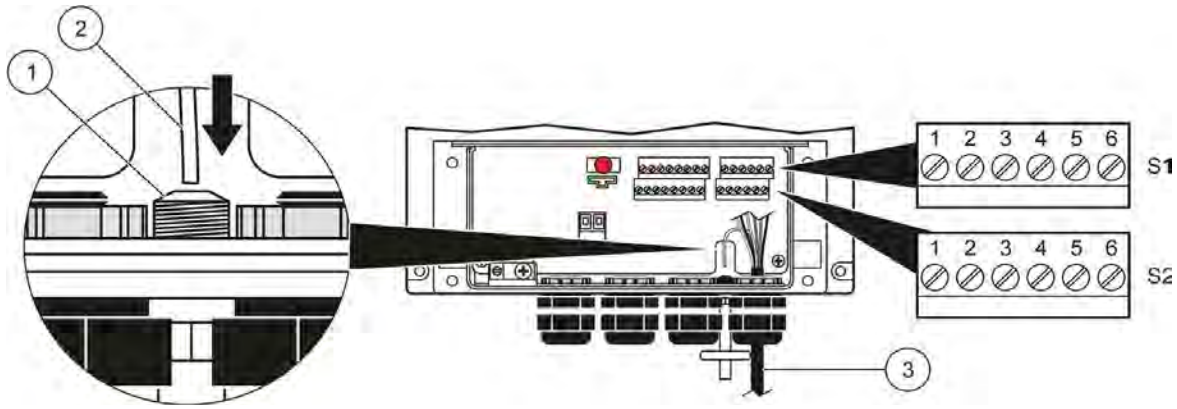

Figure 7: S1 and S2 terminal blocks

1	Strain relief fitting	**2**	APR reference tube	**3**	Sensor cable

Table 2: Terminal block connections for Flo-Dar, Flo-Tote 3 and Flo-Dar optional SVS sensor

Terminal	Flo-Dar wire color (S1)	Flo-Tote 3 wire color (S1)	SVS wire color (S2)
1	White	White	White
2	Black	Black	Black
3	Clear	Orange	Orange
4	Red	Red	Red
5	Green	Green	Green
6	Black	Black	Black

3.2.4 4-20 mA output connections

Important Note: *Always use 12 to 22 AWG, stranded, twisted pair wire.*

1. Disconnect power to the Flo-Station Monitor.
2. Remove the bottom cover.
3. Make sure that the ground wire is connected to the protective earth grounding block (Figure 5 on page 10 or Figure 6 on page 11).
4. Insert the cable(s) through the strain relief fitting or conduit hub near the CP1 terminal block (Figure 8).
5. Install each wire into the terminal block. Tighten each wire and then tug gently to make sure the connection is tight.

   Note: *Each terminal is labeled (+, -) for polarity. This is the voltage polarity when a load resistance is placed across the terminals.*
6. Tighten the strain relief, if used, to secure the cable(s).
7. Install the bottom cover.

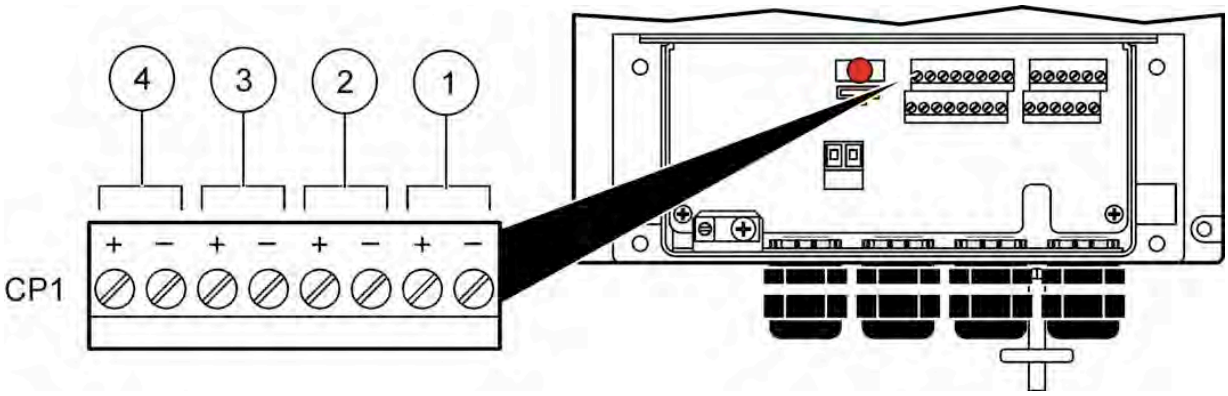

Figure 8: CP1 terminal block connections for 4-20 mA outputs

1 Flow (Channel 1)	**2** Level (Channel 2)	**3** Velocity (Channel 3)	**4** Surcharge level (Channel 4)

3.2.5 Additional connections

Important Note: *Always use 12 to 22 AWG, stranded, twisted pair wire.*

The following optional connections can be made on the CP2 terminal block:

- **Contact closure**-single pole, rated resistive load 0.5A, 60 VDC; 0.5A, 60 VAC normally open pole contact.
- **Output voltage**-12 VDC, 150 mA output to power external devices.
- **Input voltage**-0 to + 5 V input for logging only.

1. Disconnect power to the Flo-Station Monitor.
2. Remove the bottom cover.
3. Make sure that the ground wire is connected to the protective earth grounding block (Figure 5 on page 10 or Figure 6 on page 11).
4. Insert the cable(s) through the strain relief fitting or conduit hub near the CP2 terminal block (Figure 9).
5. Install each wire into the terminal block. Tighten each wire and then tug gently to make sure the connection is tight.
6. Tighten the strain relief, if used, to secure the cable(s).
7. Install the bottom cover.

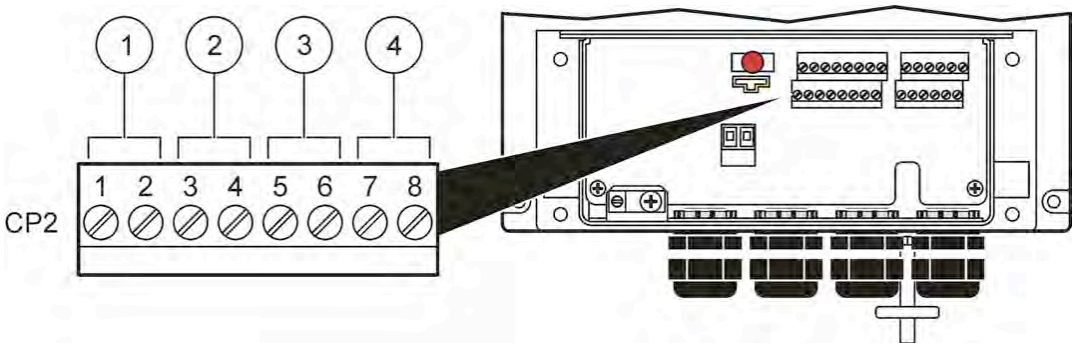

Figure 9: CP2 terminal block connections for input and contact closure

1	Contact closure, normally open	**2**	Output voltage, 12 VDC	**3**	Input voltage, 0 to +5 V	**4**	Do not use

3.3 Connect the power source

DANGER
Electrocution hazard. Hazardous supply voltage can shock or cause death. Do not connect AC power to a DC Monitor.

1. Check all connections.
2. Replace bottom panel cover.
3. Tighten screws on cover.

3.4 Optional desiccant

Install the Flo-Station monitor in a relatively dry environment such as a control room or other suitable space. A hydrophobic filter is attached to the atmospheric pressure reference (APR) port to absorb excess moisture. This filter is all that is required for most applications.

If the monitor is installed in a high moisture environment such as a pit, install an optional desiccant cartridge (Section 7 on page 20). The desiccant cartridge protects the APR tube from moisture and debris that can affect the accuracy of the surcharge level pressure transducer on a Flo-Dar sensor or primary level on a Flo-Tote 3 sensor.

1. Remove the hydrophobic filter and attach the desiccant cartridge to the APR port (Figure 10).

   Note: *Two cartridges can be used in series for extra protection.*

2. Replace the desiccant cartridge when the color changes to pink.

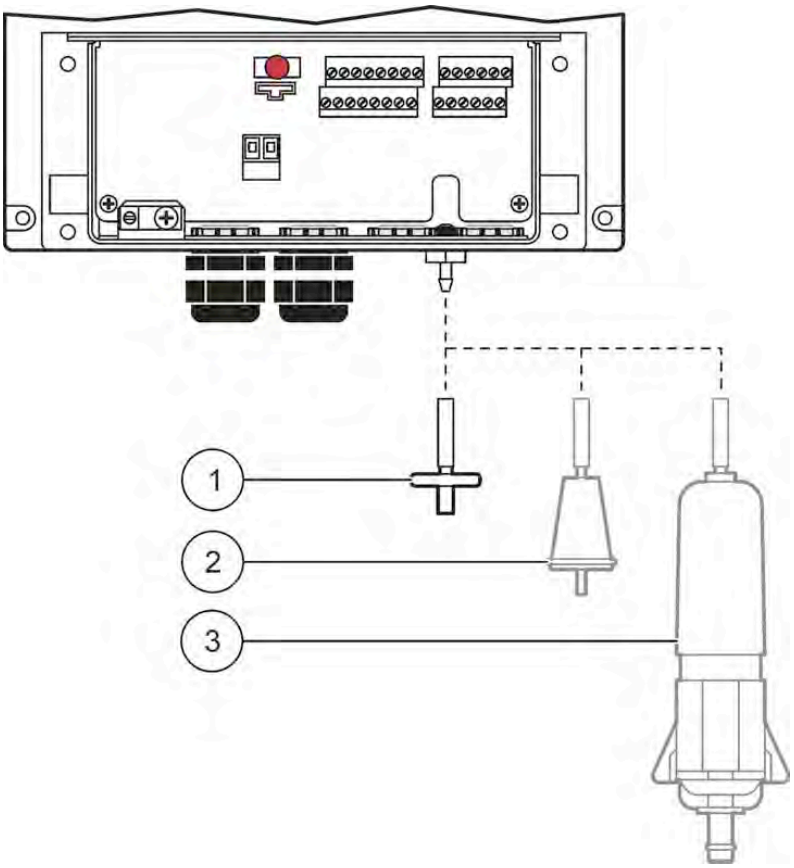

Figure 10: Desiccant cartridges

1	Hydrophobic filter	**2**	Moist environment desiccant cartridge	**3**	Low maintenance, moist environment desiccant cartridge

3.5 Record the installation measurements

1. Document the site specific data (location, site ID and description).
2. Enter the installation date.
3. Record the serial numbers of the monitor and sensor.
4. Record pipe inside dimension (ID) number.
5. Record Level offset, Sensor Offset or Level Cal as appropriate. Refer to the sensor manual for the installed sensor.
6. Record the sediment level if applicable.

4 Operation

4.1 Flo-Ware

Note: *The Flo-Ware™ Software with Flo-Dar or Flo-Tote 3 file driver is required to set up the Flo-Station.*

The Flo-Ware for Windows software is a data management and instrument communication software package. The software package includes an instrument driver, chart reports, text reports, data editing, text report designer and language designer, site set-up data collection, real time calibration, computer interface cable and an instruction manual. The Flo-Ware is provided on a CD and can be downloaded on www.flow-tronic.com.

Detailed instructions for using Flo-Ware software are contained in the Flo-Ware User Manual. The 4-20 mA output setup instructions are found in the extended setup section. Instructions are also accessed directly from the Flo-Ware program via the Help function. The sensor offset and site specific information such as pipe shape, pipe ID and sediment level obtained during sensor installation will need to be entered into the site setup section of Flo-Dar communications. For Flo-Dar sensors the “Flow Cal Method” is typically set for “Direct Mean Velocity” for circular pipes. If the application is a rectangular channel, the “Flow Cal Method” is set for “Velocity Multiplier”.

When using the Flo-Dar sensor, select “Extended Setup” if you have the optional extended range feature. Select “Extended Range” level transducer on the ultrasonic level call screen. Flo-Tote 3 sensors use a "Site Calibration Coefficient". Refer to the Flo-Tote 3 user manual for profiling and setting the site calibration coefficient.

4.1.1 RS232 serial communications cable

A portable computer with Flo-Ware software must be connected via a communication cable to the Flo-Station to set up and collect data from the flow meter. The communication cable is included as part of the Flo-Ware software package. Extra cables may be purchased by registered Flo-Ware users. The RS232 Serial Communications Connector is located on the front panel of the Flo-Station housing. The front panel should remain in place whenever the communication cable is not connected.

1. Pull the side channel away from the side of the top cover (Figure 11).
2. Remove the piece of molding from the channel.
3. Push the channel down to release the bottom attachment and open the cover.
4. Plug the RS232 cable into the connector on the front of the monitor

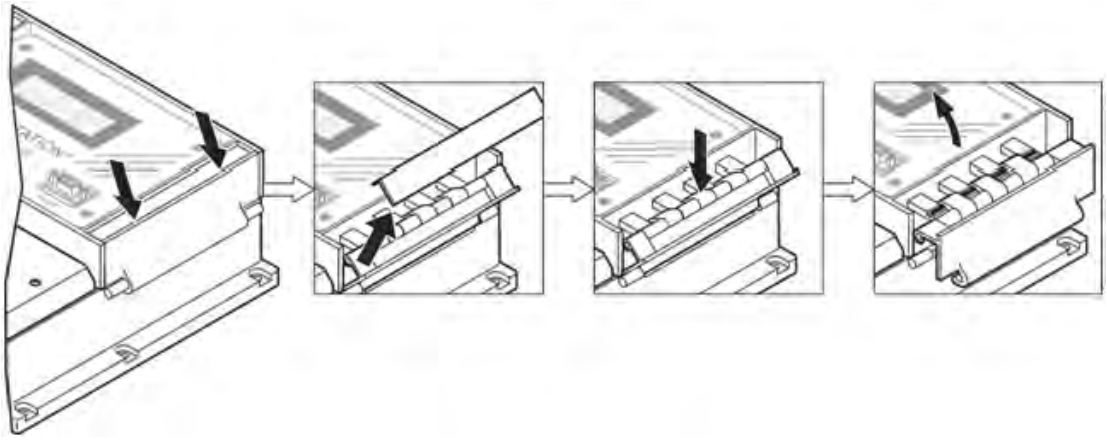

Figure 11: RS232 front panel acces

5 Maintenance

DANGER
Only qualified personnel should conduct the tasks described in this section of the manual.

5.1 Cleaning

Clean the Flo-Station periodically. Use a damp cloth only. Do not submerge or douse with water.

5.2 Fuse replacement (AC model)

The Flo-Station Monitor contains one 5 x 20 mm, 1 A 250 V fuse. Failed fuses are an indication that an equipment problem could exist. Problem resolution and fuse replacement should be performed only by qualified service personnel.

1. Disconnect power to the Flo-Station Monitor (including power to relays and other components, if powered).
2. Remove the bottom cover.
3. Use a screwdriver to open the fuse holder and remove the fuse (Figure 5 on page 10, Item 1).
4. Replace the fuse with a fuse of the same type and rating.
5. Push and twist the cover of the fuse holder to tighten.
6. Install the bottom cover.
7. Apply power to the instrument.

5.3 Desiccant replacement

Replace the desiccant cartridge when the color changes to pink (section 3.4 on page 15).

5.4 Lithium battery check

Check the back-up lithium battery life every six months. Use the Flo-Ware software to check the battery life.

6 Troubleshooting

When a problem occurs, try to determine whether the problem is from the monitor, the cables or the sensor.

Check all connections.
Check the connections and make sure that power is applied to the Flo-Station.

Verify the sensor operation.

- Determine if the problem is with just one measurement channel or if the sensor is not responding at all.
- Check the sensor for debris that may have collected.
- If the sensor is not responding, remove and inspect the connector on the sensor for moisture. Clean and dry if necessary. Tighten this connector firmly.

Verify the monitor operation.
Write down all error codes that occur and contact the factory.

Restart the microprocessor
If the Flo-Station locks up due to a power fluctuation or unknown reason, push the red reset button to restart the microprocessor (Figure 5 on page 10 or Figure 6 on page 11).

7 Replacement parts and accessories

For replacement parts and accessories, please contact your direct representative or Flow-Tronic S.A.

8 Contact Information

8.1 For Belgium and Luxembourg

Flow-Tronic S.A.
Rue J.H. Cool 19a
B-4840 Welkenraedt
Belgium

Tel : +32 (0)87 899 799
Fax : +32 (0)87 899 790
Email: site@flow-tronic.com
www.flow-tronic.com

8.2 Outside Belgium and Luxembourg

Flow-Tronic maintains a big network of dealers and distributors. To locate a representative, send an email to info@flow-tronic.com or visit www.flow-tronic.com.

8.3 Technical Support

Technical and Customer Service Department personnel are eager to answer questions about our products and their use. In Belgium and Luxembourg, call +32 (0)87 899 799. Outside the Belgium and Luxembourg, contact your direct representative or send an email to service@flow-tronic.com.

8.4 Repair Service

Authorization must be obtained from Flow-Tronic before sending any items for repair.

Steps to follow to send the device to Flow-Tronic for repair:

1. Identify the serial number of the device.
2. Record the reason for return.
3. Make sure the equipment is free from foreign debris and is clean and dry before shipping.
4. Ship the item to:

   Flow-Tronic S.A.
   Rue J.H. Cool 19a
   B-4840 Welkenraedt
   BELGIUM

5. The item that has to be repaired gets an RMA (Return Material Authorization) number.
6. The price for repair is calculated and sent to the customer.
7. Repair is made after having received the authorization from the customer.

Appendix

App. 1 Flow-Tronic Customer Service Department Registration Form

Thank you for selecting Flow-Tronic flow instrumentation for your monitoring needs. Enclosed with your instrument you should find the calibration certificate, warranty information, operation manual(s), accessories, and Software Registration Card (SRC) if you purchased our software package.

So that we may better serve your needs, please take a few minutes to complete this Customer Service Registration Form. Completion of this form will enable us to provide you with application information, software upgrades or product change notices.

Please fax (+32 (0)87 899 799) or e-mail (info@flow-tronic.com) this copy to Flow-Tronic or request the e-mail registration form at service@flow-tronic.com

If you have any questions or concerns regarding technical support, parts or service, please call Customer Service at +32 (0)87 899 797 or e-mail us at service@flow-tronic.com

Rue J.H. Cool 19a | B-4840 Welkenraedt | BELGIUM
Tel. : +32 (0)87 899 799 | Fax : +32 (0)87 899 790
E-mail : info@flow-tronic.com | www.flow-tronic.com

Customer Service Registration Form --- Customer Service Department
Flow-Tronic S.A.

Flow-Tronic Model _____ Serial Number _____

Company _____

Contact Name _____

Address _____

City _____ State _____ Zip Code _____

Phone ( ) _____ Fax ( ) _____

E-Mail _____

Application Type _____

_____

Warranty Statement

Manufacturer warrants all products of its manufacture to be free from defects in workmanship and material under normal use and service. This warranty extends for a period of twelve (12) months after date of shipment, unless altered by mutual agreement between the purchaser and Flow-Tronic S.A. prior to the shipment of the product. If this product is believed to be defective, purchaser shall notify Flow-Tronic S.A. and will return the product to Flow-Tronic S.A., postage paid, within twelve (12) months after date of shipment by Flow-Tronic S.A. If the purchaser believes the return of the product to be impractical, Flow-Tronic S.A. shall have the option, but will not be required, to inspect the product wherever located. In any event, if the purchaser requests Flow-Tronic S.A. visit their location, the purchaser agrees to pay the non-warranty expenses of travel, lodging and subsistence for the field service response. If the product is found by Flow-Tronic's inspection to be defective in workmanship or material, the defective part or parts will either be repaired or replaced, at Flow-Tronic's election, free of charge, and if necessary the product will be returned to purchaser, transportation prepaid to any point in Europe. If inspection by Flow-Tronic S.A. of such product does not disclose any defect of workmanship or material, Flow-Tronic's regular service repair charges will apply. Computing devices sold but not manufactured by Flow-Tronic S.A. are covered only by the original manufacturer's written warranty. Hence, this warranty statement does not apply.

The foregoing warranty is manufacturer's sole warranty, and all other warranties, express, implied or statutory, including any implied warranty of merchantability or fitness for a particular purpose, are negated and excluded. The foregoing warranty is in lieu of all other warranties, guarantees, representations, obligations or liabilities on the part of the manufacturer and Flow-Tronic S.A.

Purchaser's sole remedy and Flow-Tronic's sole obligation for alleged product failure, whether under warranty claim or otherwise, shall be the aforestated obligation of manufacturer to repair or replace products returned within twelve months after date of original shipment.Flow-Tronic shall not be liable for, and the purchaser assumes and agrees to indemnify and save harmless Flow-Tronic in respect to, any loss or damage that may arise through the use by the purchaser of any of Flow-Tronic's products

Important Note

Warranty extension up to 36 months (total 48 months) can be purchased by the Customer from Flow-Tronic S.A. during 6 months after instrument shipment. For more information please contact Flow-Tronic S.A. by phone, fax or e-mail.

FLOW-TRONIC sa nv

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